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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF BIOLOGICAL SURVEY
Washington, D. C.

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Dec. 3, 1920.

MEMORANDUM REGARDING DANGER OF QUAIL DESTRUCTION IN
POISONING OPERATIONS AGAINST RODENTS.

This memorandum has been prepared for the information of all employees of the Bureau of Biological Survey engaged in the distribution of strychnine-poisoned grain, in order that they may be prepared to meet statements frequently made regarding great quail mortality in connection with poisoning operations.

Gallinaceous birds as a group had been known to possess a certain immunity to strychnine poisoning, but little definite information regarding its effect on quail in particular was available until within the last few years. Experiments conducted by a representative of the Biological Survey in California in 1918 established definitely the fact that barley poisoned according to the Survey's standard ground-squirrel formula in use there had no material effect on the abundance of the valley quail under natural conditions. Quail were plentiful and remained so in areas that were heavily poisoned and in which the poisoned grain was renewed every two or three days as it disappeared. Ground squirrels were exterminated, but not a single dead quail was found; neither were any observed that manifested symptoms of strychnine poisoning. Specimens subsequently shot showed that quail had been eating the barley, though to a limited extent.

Experiments with captive birds fed on the standard ground-squirrel bait (1 to 16) showed that valley quail might eat it extensively with no deleterious effects. One adult valley quail consumed 125 kernels of poisoned barley in a period of 24 hours with no trace of ill effects. Thus, without injury to itself, this bird had eaten enough strychnine to kill 12 ground squirrels, each three or more times greater in bulk than the bird. When it is considered that ordinarily strychnine is toxic in inverse ratio to the bulk of the animals taking it, the comparative immunity of the valley quail becomes apparent. A limited number of similar experiments with mountain quail and a bob-white gave like results.

In this connection it will be well to call attention to experiments conducted by the Chief Game Guardian, Saskatchewan, Canada, where it was demonstrated that a prairie chicken ate a quantity of poisoned grain sufficient to kill 100 ground squirrels without experiencing any ill effects.

It is important that men engaged in poisoning operations be prepared to present this evidence whenever quail destruction is claimed, and at the same time that they should add to the stock of information on this subject whenever opportunity presents itself by submitting promptly to the Bureau all data secured.

E. W. Nelson
Chief of Bureau.

